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JIF = 1.500	SJIF (Morocco) = 2.031	

SOI: [1.1/TAS](#) DOI: [10.15863/TAS](#)

International Scientific Journal Theoretical & Applied Science

p-ISSN: 2308-4944 (print) e-ISSN: 2409-0085 (online)

Year: 2016 Issue: 3 Volume: 35

Published: 30.03.2016 <http://T-Science.org>

SECTION 20. Medicine.

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THE MORTALITY RATE DEPENDING ON GENDER, ETHNICITY AND RISK FACTORS IN TURKESTAN REGION

Abstract: This article presents the results of a retrospective analysis of the mortality rate of Turkestan region's population, depending on gender, ethnicity and risk factors. We studied risk factors such as smoking, alcohol, lack of physical activity, overweight. A comparative analyze of the urban and rural dwellers.

Key words: Mortality, gender, ethnicity, smoking, alcohol, lack of physical activity, overweight.

Language: English

Citation: Ibragimova DK, Shalkharova ZS, Sadykova AD, Zhunisova MB, Sadykova KZ, Shalkharova ZN (2016) THE MORTALITY RATE DEPENDING ON GENDER, ETHNICITY AND RISK FACTORS IN TURKESTAN REGION. ISJ Theoretical & Applied Science, 03 (35): 176-181.

Soi: <http://s-o-i.org/1.1/TAS-03-35-30> **Doi:**  <http://dx.doi.org/10.15863/TAS.2016.03.35.30>

Background. Mortality – is a species extinction process and one of two main sub-processes of human reproduction. It is depending on a big amount of biological and social factors (climatic, genetics, economic, politic, cultural, etc.).

Mortality is a mass process, which consists of a large number of single instances, happened in different ages, which determine in his own aggregate real or hypothetic generation's attrition. It is an initial vital one, demographic statistic's system collect and

combine data for. Death statistics as analyze of mortality is needed for demographic aims and for practice, firstly for public health agencies and social politics [1-3].

Mortality data is necessary as for analyze past demographic trends, so for demographic forecast development. The last one, as it is known, is used almost in all spheres: for planning housing services development, education and health care systems, for realization social protection programs, for production



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of consumer goods for different social group of population. Mortality statistics is needed for morbidity analyzing, as on the national, so on the regional levels [4].

Death rate depends on an influence of a huge amount of factors, divided into 4 most important groups:

1. natural-biological factors – heredity, environmental, etc.;
2. social-economic factors- lifestyle, living, peculiarities and working conditions, health care system developing, war, etc.
3. demographic (structured) factors – gender, age, marriage, territorial and other composition of the population;
4. harmful habits - death accomplices: smoking, alcohol, drugs, etc. [5].

More than third of all deaths in a world, to one extent or another, are related to a small amount of risk factors. Appreciation the role of these risk factors is a key to an effective and a clear-cut strategy of significant improvements in health in a whole world. Hypertension (cause of 13% of mortality in a world), smoking (9%), high level of glucose in a blood (6%), lack of physical activity (6%), overweight and obesity (5%) are the main global risk factors of death in a world. These factors increase risks of developing chronic diseases such as cancer, heart disease and diabetes. All these risk factors influence on a population of countries with all groups of income level: high, middle and low [6].

Nowadays, there are about a 1 billion smokers in the world. Cigarettes, cigars, hookah and chewing tobacco are the main types of tobacco products. WHO estimates, that the most highest rate of prevalence of using tobacco is almost 31% in the European region, and the lowest is 10% - in the African Region. Not only the direct using of tobacco is the threat to health, but also a passive smoking is harmful. Every year about 6 million people die from addictive tobacco use and passing smoking, mortality rate is 6% of female and 12% male. WHO forecasts that by 2030 year, the annual rate of death linked to tobacco use, more than 8 million people [7-12].

Lack of physical activity is the fourth leading risk factor of the mortality. Every year, it is associated with 3.2 million deaths and 32.1 million of DALY (disability-adjusted life year), representing approximately 2.1% of the global total DALY [8]. For people with a lack of physical activity, the risk of death from all causes is higher to 20-30%, comparing to people who are involved in no less than 30-minute episodes of physical activity most days of the week. In 2008, the lack of physical activity showed 31.3% of people aged 15 years and older (28.2% men and 34.4% women). The WHO reports about the situation about NCDs in the world, it was shown, that the most highest rate of prevalence of lack of physical activity observed in the WHO Region for America and the

WHO Eastern Mediterranean Region [9]. In all WHO regions, men are more active than women, but the highest data's of differences in the prevalence of low level of physical activity between men and women exists in the WHO of the Eastern Mediterranean Region. [13]

Addictive drinking of alcohol is a risk factor for numerous adverse medical and social outcomes. The harmful consuming of alcohol led to 2.5 million deaths in 2004 year (3.8% of the total) [8, 14-15].

Annually, no less than 2.8 million people die because of the overweight or obese in the world. [9]. In a 2008, 34% of the adults, older than 20 years had an overweight, in men 33.6%, and 35% of women had them. According to the data for that year, 9.8% of men and 13.8% of women had obesity, and their BMI was equal to or greater than 30 kg / m². According to the data from prospective epidemiological studies from whole world, there is a link between overweight or obesity, on the one hand, and cardiovascular morbidity, mortality from CVD and total mortality. Obesity is closely associated with the main of cardiovascular risk factors, such as hypertension, impaired glucose tolerance, diabetes type mellitus II and dyslipidemia [9,16-19].

Canadian researchers conducted a cohort study about the impact of overweight to all causes of death. The respondents were older than 40 years. The study included 49,476 women (average rate of age was 63.5 years, mean of BMI 27.0 kg / m², the average fat deposits rate- 32.1%) and 4944 men (average age rate was 65.5 years, average rate of body mass index of 27.4 kg / m², average body fat, 29.5%). Death occurred in 4965 women earlier to a 6.7 years and 984 men to a 4.5 years, respectively. They concluded that a low body mass index and a high percentage of body fat deposits independently associated with increased rate of mortality [20].

Considering the mortality by a gender differences, according to the World Bank among men of Eastern Europe and Central Asia, the probability of untimely death is higher than in women, and this tendency is due to the increasing number of cases of chronic diseases resulting from alcohol consumption, smoking and unhealthy diet. While indicators of women's mortality declined for the period of four decades, in men in some age groups there was an increase in mortality, but in others progress has been negligible or absent altogether.

Europe is on a second place after Africa by the total mortality. However, there is a one of the highest rate of an average life expectancy in Europe. Due to a low rate of birth and as the result of a high rate of life expectancy there is a large proportion of older people, despite the fact that high death is more common to an older people, than young [21-23].

Scientists from the US have been studied the link between ethnicity and mortality from all causes.

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The study involved 12.181 African-American race and 17.436 European race, older than 45 years. Despite on the adjustment on demographic indicators, estimation (self-estimation) of health, health status, mortality rates from all causes were significantly lower in African-American race than in those people with the white race. In older ages (75-80 years), race performance in African American individuals may be reduced [24].

Exploring the mortality statistics of Russian Federation, scientists identified, that there is a tendency of mortality reduction in the period from 2002 till 2014 y.y., and moreover this determinant decrease to 0.1 every year [25]. There was also a research dedicated for analyzing the mortality in different regions. For example, in Tver region there were realized complex scientific works, where were worked out a mortality decreasing programming methods. In additional there were solved problems of loss prevention due to reducing death from traffic accidents, diseases of the digestive tract and infant mortality [26].

The total rate of mortality in the Republic of Kazakhstan, starting from a number 769.3 in 1990 year. raised to 1046 in 2003 year. Further there was a trend of decreasing of this rate According to the Health Care System of Kazakhstan, there was marked declines in the rate of the total mortality to 19% (2010 - 9.0 per 1,000 population in 2014 - 7.57). At the same time the death rate in men among the productive age is for 24% higher than in women [27].

According to the WHO - the annual rate of addictive drinking alcohol in Kazakhstan (Equivalent F/h of the alcohol / per capita) decreased slightly: from 7.1 (2007 y.) till 6.6 (2012 y.), the prevalence of tobacco smoking (% of tobacco \geq 15 years aged people) - from 23.1 (2007 y.) to 22.4. According to the results of a nationally representative study 12% of girls, 17% of boys and 53.1% of adults have an overweight or obese [28-29].

Nowadays high mortality- is one of the flash points of demographic situation the Republic of Kazakhstan. One of the ways of it is decreasing is

prioritization by identifying the main preventable causes of death and capabilities of troubleshooting. In particular, promoting science-based approaches may contribute for exploring and identifying preventable causes of death for decreasing mortality rate.

AIM: To study the mortality indicators depending on gender, nationality and risk factors in Turkestan (South Kazakhstan).

Design: Retrospective study.

Materials and methods:

Analyze of mortality indicators was undertaken on the base of population - based study, directed by Shalkharova Zh.S., 2003 [30].

After 12 years from the previous study- 1822 volunteers, who were explored in 2003 were taken response from 1143. As it turned out, that from 1143 person 166 - were dead. All 166 death were divided into 4 groups by the place of residence and nationality:

- Urban population (128 died from 704)
- Rural population (38 died from 439)
- Kazakh nationality (79 died from 455)
- Uzbek nationality (72 died from 642)

Patients' medical record of 2003 year were analyzed for retrospective study with associative links, from which were collected data as nationality, place of residence, body mass, height, waist circumference, hip circumference, body mass index and data on risk factors: smoking, alcohol drinking, lack of physical activity, overweight.

Statistical analysis was made with the using of packages as MS EXCEL, BIostat. The Pearson's X^2 was used for the comparative analysis.

Results:

By the results of our research it was determine that from 1143 patients- urban population accounts 61.6% and rural population – 38.4%. From 1143 respondents - 166 were dead.

Table 1
Data about death depending on gender, nationality and place of residence.

	Overall (N=1143)		Urban (n=704)		Rural (n=439)	
	N	%	N	%	N	%
Death	166	14,5	128	18,2	38	8,7
Man	96	8,4	72	10,2	24	5,5
Women	70	6,1	56	8,0	14	3,2
Kazakh	79	6.9	65	9.2	14	3.2
Uzbek	72	6.3	48	6.8	24	5.5
Other nationalities	15	1.3	15	2.1	0	0

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In the structure of mortality rates male and female were 8.4% and 6.1%, respectively. While dead male in rural areas- were less for 4.7%, than in urban areas. For female the same - in rural is less than 4.8%, than in urban. As for nationality, and for

Kazakh and for Uzbek people it was a big number of death in the urban compared to rural.

Mortality data according to risk factors, identified in 2003, showed in a Table 2.

Table 2

Mortality rate depending on risk factors

	Overall		Urban		Rural	
	N	%	N	%	n	%
Death	166	100,0	128	100	38	100
Smoke	37	22.3	29	22.7	8	21.1
Alcohol	126	76.0	103	80.5	23	60.5
lack of physical activity	50	30.1	37	29.0	13	34.2
Overweight	82	49.4	64	50.0	18	47.4

Investigating the mortality rate according to risk factors there were no differences between urban and

rural areas. It should be noted, that volunteers in rural using alcohol is less for 20%.

Table 3

Mortality rate depending on risk factors and nationality.

	Overall		Kazakh (n=455)		Uzbek (n=642)	
	N	%	N	%	n	%
Death	166	100.0	79	100.0	72	100.0
Smoke	37	22.3	16	20.3	17	23.6
Alcohol	126	76.0	63	79.7	50	69.4
lack of physical activity	50	30.1	43	54.4	38	57.8
Overweight	82	49.4	38	48.1	21	29.2

The comparative analyzing of mortality rate depending on the risk factors and ethnicity showed us that there were no significant changes. It should be noted, that among the Uzbeks for 18,9% less death than in Kazakhs.

Conclusions:

Investigating mortality according to the gender the following data were identified: death in male in the rural for 4.7% less, than in the urban. For female the similar in rural is less than 4.8% than in urban.

As for nationality, and for Kazakh and for Uzbek people it was a big number of death in the urban compared to rural.

Researching mortality rate according to the risk factors identified differences between urban and rural areas. It should be noted, that rural dwellers use alcohol for 20% less than urban. The comparative analyzing of mortality rate depending on the risk factors and ethnicity showed us that there were no significant changes. It should be noted, that among the Uzbeks for 18,9% less death than in Kazakhs.

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